

**Remark:**

Claims 1-32 were pending. No claims have been canceled. No claims have been added. Hence, claims 1 – 32 remain pending.

**Rejections under 35 U.S.C. § 102(b)**

Claims 1 – 3, 5, 7, 13 – 14, 16 – 20, 22 and 26 – 31 were rejected under 35 U.S.C. 102(b) as purportedly being anticipated by Hluchyj et al. (US Pat. No. 5,402,478) (hereafter, Hluchyj). Applicant traverses these rejections. Prior to discussing each claim rejection in detail, a brief summary of Hluchyj is provided.

In Hluchyj, a “method and system are utilized for *routing a call* in a communication network having diverse quality-of-service constraints.” *See Hluchyj at col. 3, ll. 59 – 61* (emphasis added). For each call that arrives, “an optimized data transfer path [is recomputed] in view of the available network resources”. *See id. at col. 7, ll. 2 – 4*. A “fallback strategy method is used for *routing a call* in an integrated traffic-type communication network”. *See id. at col. 7, ll. 44 – 46*. When a user initiates a call, information in the call “allows an ‘incoming’ exchange to determine an optimal feasible path that is available within the communication network for transmission of the call”. *See id. at col. 8, ll. 30 – 35*. Thus, Hluchyj relates to call-by-call routing of calls through available network resources as the calls are initiated.

By contrast, the present application relates to automating the design process for designing an optimal route for a circuit between a source and a destination location, as specified in a communication line *installation* request. *See Application, p. 1, ll. 27 – 29* (emphasis added). Turning to the claims, claim 1 is reproduced here for ease of discussion:

**Claim 1.** An automated routing system for designing a route in a communications network through which a communication line may be installed between a source location and a destination location as specified in a service request for the communication line, the system comprising:  
a find module identifying one or more possible capacity links within the communication network, each capacity link representing an ability to transport data over a predefined segment of the communication network between the source location and the destination location;  
a build module constructing a capacity graph of the communication network depicting connectivity of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source node representing the source location and a destination node representing the destination location; and  
a select module applying a routing algorithm to the capacity graph to select an optimal route from the one or more possible routes based on a

calculated cost factor for installation of the communication line into each of the possible routes within the computer network.

The Office first asserts that Hluchyj teaches an automated routing system for designing a route in a communications network through which a communication line may be installed between a source location and a destination location as specified in a service request for the communication line at col.3, ll. 65 – 67 and col. 4, ll. 57 – 58. The cited sections of Hluchyj are reproduced here:

“The method includes the steps of: (1) selecting a constrained ***routing for the call***; (2) determining an optimal feasible path and, where the optimal feasible path is available, the network's implementing the optimal feasible path...

...  
The strategy is to determine an acceptable path ***for each call*** in an efficient manner.” (emphasis added).

The foregoing passages teach a method for call-by-call source routing. By contrast, claim 1 recites, in part, “designing a route in a communications network through which ***a communication line may be installed***... as specified in ***a service request*** for the communication line”. (emphasis added). Hluchyj is not directed at installing a communication line based on a service request. The passages cited above show clearly that Hluchyj is directed at routing each call on a call-by-call basis. The passages above do not mention or even suggest installation of a communication line or a service request for the communication line. Indeed, nowhere does Hluchyj teach or reasonably suggest installing a communication line based on a service request.

For at least this reason, Hluchyj does not anticipate claim 1. However, claim 1 includes at least several other elements that Hluchyj fails to teach or suggest. For example, claim 1 recites, in part, “a build module constructing ***a capacity graph*** of the communication network depicting connectivity of each of the possible capacity links to an adjacent possible capacity link such that one or more possible routes are defined between a source node representing the source location and a destination node representing the destination location”. By way of example, one possible capacity graph is illustrated in Fig. 4 of the present application. Applicant has thoroughly reviewed Hluchyj and can find no reference to a capacity graph as recited in claim 1.

The Office asserts that the “build module” element of claim 1 is taught in col. 7, ll. 65 – 68 and col. 8, ll. 1 – 10. The cited sections are related to Fig. 2. Column 7, line 42 through col. 8, line 10 are reproduced here to illustrate the entire context of the cited sections:

“FIG. 2, numeral 200, is a flow chart illustrating steps for a first embodiment of the fallback strategy method of the present invention. The fallback strategy method is used for **routing a call** in an integrated traffic-type communication network, typically a network having diverse quality-of-service requirements. Integrated traffic-type communication networks are known in the art, and thus, are not further described herein. The fallback strategy method of the present invention utilizes the steps of (1) selecting a constrained routing **for the call** (202), (2) determining an optimal feasible path, and, where the optimal feasible path is available, the network's implementing the optimal feasible path (204), and (3) implementing a fallback strategy upon one of: determining that the optimal feasible path is unavailable under the selected constraints, and the network's being unsuccessful in implementing the optimal feasible path **for routing the call** (206).

Thus, whereas in alternate routing a sequence of predetermined paths is attempted, the fallback routing of the present invention utilizes alternate paths determined as needed based on a sequence for a constrained routing, where the constrained routing sequence may be predetermined, or alternatively, may be **a real-time selection**. The step of selecting a constrained routing (202) typically comprises determining a routing in accordance with a predetermined routing policy and a predetermined quality-of-service that generally includes link constraint(s), path constraint(s), and objective functions. Link constraints are typically based upon link availability, unallocated capacity for calls of various priority classes, link accuracy (e.g., bit error rate, frame loss rate), and link resource preferences. An objective function is a predetermined network- or user-selected performance goal. Path constraints and objective functions are typically based upon performance attributes such as cost and delay.”

As an initial matter, the foregoing passage of Hluchyj repeatedly points out that the system is for routing a call. Routing the call involves determining an available path for the call, and may be performed with real-time selection. As such, the cited section, is not relevant to the invention of claim 1, which relates to installation of a communication link.

Hluchyj discusses that quality-of-service takes into account link constraint(s), path constraint(s), and objective functions; however, the cited section fails to disclose or reasonably suggest a build module as explicitly recited in claim 1. For example, the above passage does not teach **constructing a capacity graph depicting connectivity of each of the possible capacity links to an adjacent possible capacity link**. As such, the Office's rejection fails to consider all the words of claim 1 as the rules require. *See In re Wilson*, 424 F.2d 1382, 1385, (CCPA 1970) (“**All words** in a claim must be considered in judging the patentability of that claim against the

prior art." (emphasis added)). In addition, the Office's assertion that the cited sections teach the "build module" is an improper attempt to distill claim 1 down to the "gist" of the invention, and therefore fails to consider the invention of claim 1 as a whole. See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983).

Claim 1 also includes "a select module applying a routing algorithm to the capacity graph to select an optimal route from the one or more possible routes based on a calculated cost factor for installation of the communication line into each of the possible routes within the computer network." Because Hluchyj fails to teach or reasonably suggest a capacity graph as recited in claim 1, Hluchyj necessarily fails to teach or reasonably suggest a select module as recited in claim 1. For this reason alone, the Office's rejection of claim 1 is inappropriate.

The Office asserts that the "select module" element of claim 1 is disclosed at column 2, lines 60 – 63, and column 10, lines 38 – 64. These sections are reproduced here:

"The simplest class of alternate routing algorithms is fixed alternate routing--i.e., a set of predetermined paths are attempted in a fixed order until a feasible path is found *or the call is blocked*.

...

FIG. 5, numeral 500, is a diagram illustrating application of a heuristic algorithm for a multicriteria constrained shortest path problem with cost and delay as routing criteria in accordance with the present invention. Where multiple path constraints (for example, cost and delay) are utilized, a feasible region (502) may be established, but no single optimal feasible path may necessarily be said to be an only solution to satisfy the constrained routing criteria. Thus, the present invention provides for solving the original optimal-path problem without path constraints, and then provides for checking against path constraints to determine if the selected path is feasible. Incorporation of fallback routing allows each call to have more than one attempt to compare routing alternatives and establish a feasible path. Thus, FIG. 5 illustrates an exemplary embodiment of an implementation of a heuristic algorithm for the multi-criteria constrained shortest-path problem wherein two routing criteria, cost and delay, are ranked according to a predetermined degree of importance, and then are used to determine the optimal-path objective functions for initial (Initial Objective Function, 504) and fallback (Fallback Objective Function, 506) path determinations. It should be noted that, although it is desirable to favor paths with low cost and small delay, a typical user has a highest concern for meeting path constraints (*i.e., completing a call*)."

The cited section clearly relates to completing a call, and not to installation of a communication line. As such, Hluchyj fails to teach or reasonably suggest all the elements of claim 1.

Therefore, claim 1 is believed to be allowable. Independent claims 13 and 26 include elements similar to those recited in claim 1, and are therefore believed to be allowable for at least the same reasons given above. Claims 2 – 3, 5 and 7 each depend in some form from claim 1. Claims 14, 16 – 20 and 22 depend in some form from claim 13. Claims 27 – 31 depend in some form from claim 26. As such, claims 2 – 3, 5, 7, 14, 16 – 20, 22, and 27 – 31 are believed to be allowable for at least the same reasons as given above for claim 1.

**Rejections under 35 U.S.C. § 103(a)**

Claims 4, 6, 8 – 12, 15, 21, 23, 25, and 32 were rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over Hluchyj, in view of official notice. Applicant traverses these rejections.

As an initial matter, each of claims 4, 6, 8 – 12, 15, 21, 23, 25, and 32, depend in some form from respective independent claims that are believed to be allowable. For this reason alone, these claims are also allowable.

Regarding the rejections of claims 4 and 21, the Office acknowledge, and Applicant agrees, that Hluchyj does not specifically teach the use of a submit module submitting the optimal route to a command and control engine for installation of the communication line. However, without any supporting documentary evidence, the Office asserts that the elements recited in claims 4 and 21 would have been obvious to one of ordinary skill in the art. Applicant traverses the Office's official notice.

Official notice unsupported by documentary evidence should *only* be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of *instant and unquestionable demonstration* as being well-known. Notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration *as to defy dispute*". *In re Ahlert*, 424 F.2d 1088, 1091, (CCPA 1970) (emphasis added). In the present case, the Office's notice of facts beyond the record clearly defy dispute.

For example, claims 4 and 21 relate to installation of a communication line. As shown above, Hluchyj is directed at routing calls on a call-by-call basis through an available path

through a network. As such, Hluchyj is irrelevant to claims 4 and 21. For that reason alone, one of skill in the art would not be motivated to modify Hluchyj in the manner suggested by the Office.

However, even if the Office's official notice is proper, which Applicant denies, the Office's rejection does not even use the language of claims 4 and 21, and therefore fails to set forth a *prima facie* case of obviousness with respect to claims 4 and 21. The Office's rejection states that "it would have been obvious to one of ordinary skill in the art ... to have submit the optimal route *to a submitting unit or any similar device*, which will be in charge of having the optimal route *implemented* and works properly as its originally designed. Examiner takes official notice that submitting an optimal route to a submitting unit in order to *implement* the communication line is old and well known in the art." *See Office Action, p. 6* (emphasis added).

By contrast, claims 4 and 21 recite, in part, "a submit module submitting the optimal route *to a command and control engine for installation* of the communication line using the optimal route if the route available test module determines that the optimal route is available for use by the communication line." (emphasis added). The Office's rejection appears to rewrite claims 4 and 21 in order to support its rejection. However, the Applicant should at least be assured that the words he/she selects in the claims are the words that are actually examined by the Office. As such, the Office has failed to set forth a *prima facie* case for its rejection of claims 4 and 21. For at least these additional reasons, claims 4 and 21 are believed to be allowable.

With regard to claims 6, 8 – 12, 15, 23, 25 and 32, the Office acknowledges that Hluchyj fails to disclose elements in those claims, and Applicant agrees. However, the Office attempts to make up for the deficiencies of Hluchyj by taking official notice as to the missing elements. Applicant traverses the Office's official notice. As discussed above, official notice may only be taken where the facts asserted to be well-known are "capable of such *instant and unquestionable demonstration as to defy dispute*". *See MPEP § 2144.03 A*. Applicant asserts that the asserted facts are clearly not capable of instant and unquestionable demonstration as to defy dispute. For example, claims 8, 25, and 32 further recite a service request specifying intermediate locations through which the communication line must pass. Hluchyj does not even disclose or reasonably suggest a request for installation of a communication line, let alone a request that specifies intermediate locations. Therefore, one skilled in the art would not be motivated to modify Hluchyj as suggested by the Office.

If the Office chooses to maintain these rejections, Applicant requests that the Office support its alleged findings with adequate evidence, as provided in MPEP § 2144.03 C.

For at least these additional reasons, claims 4, 6, 8 – 12, 15, 21, 23, 25, and 32 are believed to be allowable, and such allowance is respectfully requested.

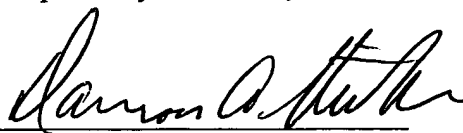
**Conclusion**

This Amendment and the foregoing remarks fully respond to the Office Action mailed on December 12, 2005. Still, the Office Action may contain arguments and rejections that are not directly addressed by this Amendment due to the fact that they are rendered moot in light of the preceding arguments in favor of patentability. Hence, failure of this Amendment to directly address an argument raised in the Office Action should not be taken as an indication that the Applicant believes the argument to have merit. Furthermore, the claims of the present application may include other elements, not discussed in this Amendment, which are not shown, taught, or otherwise suggested by the art of record. Accordingly, the preceding arguments in favor of patentability are advanced without prejudice to other bases of patentability.

Should the Examiner have any remaining questions or concerns, he/she is encouraged to contact the undersigned attorney by telephone (303-447-7739) to expeditiously resolve such concerns. Because this Amendment is being filed after March 12, 2006, but prior to April 13, 2006, please charge the requisite fees due under 37 C.F.R. §1.136(a) to maintain pendency of this application to the credit card identified in the enclosed PTO Credit Card Payment Form 2038. No other fees are believed due for submission of this Amendment. However, if this is not the case, please charge any such fees to Deposit Account No. 06-0029. Alternatively, please credit any overpayment to the same Deposit Account.

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Respectfully submitted,



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